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FM NPIC

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TO AFSSO SAC

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T O P S E C R E T [redacted] CITE NPIC 6656. 25X1

ATTN: DISD FOR [redacted] 25X1

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1. THE FOLLOWING TECHNICAL DATA IS RELATIVE TO THE COLOR IMAGERY PORTION OF MISSION 4024.

A. FILTERS EMPLOYED

(1) POLARIOD - THIS FILTER DOES NOT AFFECT THE VARIOUS WAVE LENGTHS. ON THIS MISSION THE POLARIOD FILTERED AREA REPRESENTS A NO FILTER CONDITION.

(2) WRATTEN 12 - THIS IS A HEAVY YELLOW (MINUS BLUE) FILTER NORMALLY USED IN BLACK AND WHITE AERIAL PHOTOGRAPHY AS A HAZE CUTTING FILTER. IT ABSORBS ALL VISIBLE LIGHT RADIATION BELOW 500 MICRONS (EXCEPT FOR AN EXTREMELY NARROW WINDOW IN THE ULTRA-VIOLET REGION). (THE TRANSMISSION IN THIS AREA IS LESS THAN 1 PERCENT OF THE WAVE LENGTHS INVOLVED AND HAVE A NEGLIGIBLE EFFECT ON THE FILM). ON THIS MISSION THE WRATTEN 12 FILTER PROVIDED AN OVERALL HEAVY YELLOW CAST TO THE MATERIAL. NO MAGENTA OR CYAN IMAGES CAN BE DETECTED IN THE EMULSION WHERE THIS FILTER WAS EMPLOYED.

(3) WRATTEN 4 - A YELLOW FILTER NORMALLY USED IN BLACK AND WHITE PHOTOGRAPHY TO CORRECT THE OVER ABUNDANCE OF BLUE INTRODUCED

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TOP SECRET

BY THE SKY. IT IS NOT USUALLY USED IN AERIAL PHOTOGRAPHY. THE WRATTEN 4 ABSORBS ALL VISIBLE LIGHT RADATION BELOW 455 MICRONS AND TRANSMITS SOME BLUE AND MORE GREEN AND RED RADIATIONS THAN THE WRATTEN 12. ON THIS MISSION THE MATERIAL EXPOSED THROUGH THE WRATTEN 4 FILTER PROVIDES NEAR OPTIMUM COLOR BALANCE WHERE THE EXPOSURE WAS ACCURATE. THE EXPOSURE WAS COMMENSURATE WITH SOLAR ELEVATION, AZIMUTH, AND TERRIAN TEXTURE.

(4) WRATTEN 2E - AN EXTREMELY LIGHT YELLOW FILTER, RARELY USED EXCEPT FOR SCIENTIFIC AND EXPERIMENTAL PROJECTS. THIS FILTER ABSORBS ONLY THE LIGHT RAYS BELOW 410 MICRONS. THE PREDOMINANCE OF BLUE NEGATES THE VALUE OF THE MATERIAL EXPOSED THROUGH THE WRATTEN 2E FILTER.

(5) BAUSCH & LOMB Y-10 - THIS IS A HEAVY YELLOW (MINUS BLUE) FILTER SIMILAR TO THE WRATTEN 12. IT IS USED WITH THE TYPE 3404 BLACK AND WHITE FILM TO ABSORB THE ATMOSPHERIC BLUE RADIATION (HAZE) THAT IS DETRIMENTAL TO ALL HIGH, SUPER AND HYPER ALTITUDE PHOTOGRAPHY. THIS FILTER WAS USED ON ONLY A FEW FRAMES OF THE COLOR MATERIAL.

2. THE INTENT WAS TO TAKE A SERIES OF STEREO PAIRS SO THAT SOME WOULD BE ALL COLOR STEREO; SOME WOULD HAVE THE FORWARD IN COLOR AND THE AFT IN BLACK AND WHITE; OTHERS WOULD HAVE THE FORWARD IN BLACK AND WHITE AND THE AFT IN COLOR; SOME WOULD HAVE PORTIONS OF A FRAME IN COLOR AND THE BALANCE IN BLACK AND WHITE AND STILL OTHERS WOULD BE ALL BLACK AND WHITE STEREO. THIS WOULD HAVE PROVIDED INFORMATION TO DETERMINE:

A. THE EFFECTS OF SOLAR ELEVATION

B. THE EFFECTS OF SOLAR AZIMUTH

C. COMPARATIVE RESOLUTION

D. VALUE OF COLOR AND B/W STEREO

E. VALUE OF ALL COLOR STEREO

HOWEVER, HEAVY CLOUDS IN THE AREA WHERE THE TRANSITION FROM B/W TO COLOR OCCURRED NEGATES A COMPREHENSIVE STUDY.

3. THE AREAS PHOTOGRAPHED ON THE COLOR MATERIAL ARE LIMITED TO THREE PASSES. PASS 78D WHICH RECORDED PORTIONS OF CENTRAL SOUTH AMERICA AND PASS 79D WHICH RECORDED PORTIONS OF THE NORTHWEST COAST OF SOUTH AMERICA. THERE ARE 22 STEREO PAIRS AND 4 MONO STRIPS OF PLOTTABLE COLOR COVERAGE ON THESE TWO PASSES. THE COVERAGE INCLUDES SELECTED AREAS BETWEEN 3.2 DEGREES NORTH AND 43.4 DEGREES SOUTH WITH SOLAR ELEVATIONS FROM 49.4 DEGREES TO 83.6 DEGREES. PASS 80D PHOTOGRAPHED SELECTED AREAS BETWEEN [redacted] 25X1

[redacted] AND THEREAFTER HEAVY CLOUDS OBSCURED ALL 25X1

TERRAIN IMAGERY ON SUBSEQUENT FRAMES OF THIS PASS. THE PHOTOGRAPHED AREAS RANGE FROM [redacted] DEGREES NORTH WITH 25X1

SOLAR ELEVATIONS FROM 12.2 DEGREES TO 30.3 DEGREES.

GP-1

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--END OF MESSAGE--